

BLACK SWIFT (*Cypseloides niger*)

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Criteria Scores

Population Trend	Range Trend	Population Size	Range Size	Endemism	Population Concentration	Threats
5	5	10	10	0	5	5

Special Concern Priority

Currently considered a Bird Species of Special Concern, Priority 3 (Remsen 1978).

Breeding Bird Survey Statistics for California

Data inadequate for trend assessment (Sauer et al. 2000).

General Range and Abundance

The black swift is widely but locally distributed throughout western North America, breeding from southeastern Alaska to southern California, as far east as central Colorado, south through Mexico and northern Central America to Costa Rica, and on some Caribbean islands. Despite this extensive range, less than 100 specific nesting locations have been documented, so the world population is comparatively small. It is believed the entire population winters in northern South America (Lowther and Collins 2002). Three subspecies have been described primarily on size variations; the California population is part of the widespread North American subspecies (*borealis*).

Seasonal Status in California

Black swifts occur from mid-April through mid-October, but birds in the first and last month of occurrence are probably migrants. Nest sites have been occupied from mid-May (Santa Cruz

coast) to mid-September (Sierra) but most nesting activity occurs from June to early September (Legg 1956, Gaines 1988, Marin 1999, Lowther and Collins 2002).

Historical Range and Abundance in California

Grinnell and Miller (1944) described nesting black swifts as "fairly common locally" although the overall California population was "probably small in aggregate" due to the specific nesting requirements. These breeders were summer residents from May to October and limited to specific "sea-bluffs above surf, and cliffs behind or near waterfalls in deep canyons." Breeding was known or suspected from three distinct areas.

Central California coast. Historic locations of confirmed nesting included sea-cliffs from Santa Cruz (the first nest and eggs known to science; Vrooman 1901) to Davenport (egg set data, Museum of Vertebrate Zoology, Berkeley), and behind Berry Creek Falls in Big Basin Redwood State Park, Santa Cruz Mountains (Smith 1928, MVZ egg set data). From summer occurrences at Pt. Lobos, Monterey County, nesting was suspected somewhere along that coast (Grinnell and Miller 1944), perhaps at mouth of Rocky Creek (June 1937 specimen, MVZ).

Central and southern Sierra Nevada. Nesting documented behind various waterfalls and on steep cliffs in Yosemite Valley, Mariposa County (C.W. Michael 1927, E. Michael 1933) with the breeding range extending south to Kings Canyon National Park, Fresno County, and the Marble Fork of the Kaweah River, Sequoia National Park, Tulare County (Dixon 1943, Grinnell and Miller 1944).

San Bernardino and San Jacinto Mountains. Grinnell and Miller (1944) cited circumstantial evidence that nesting occurred in these mountains. A June 27, 1897, specimen from San Jacinto Lake, Riverside County (MVZ) suggested nesting in the vicinity.

Grinnell and Miller (1944) listed a number of other records that were obviously migrants far from nesting habitat in San Diego, San Diego Co.; Alameda, Alameda Co.; and Owens Lake, Inyo County. However, an 1892 record from the Pit River, "probably in Shasta County," is near subsequently identified breeding sites, as is an August 1, 1889, record from Webber Lake, Sierra County; both probably represented summer resident birds. If so, the montane nesting range at the time of Grinnell and Miller (1944) stretched from the southern Cascades in northeastern California, south through the Sierra Nevada to Sequoia National Park, with a separate population in southern California's transverse range mountains.

Recent Range and Abundance in California

The outline of the breeding range today remains largely unchanged, although many specific nesting sites have been discovered only in recent years. The breeding range still has three discrete elements, and nesting sites range from sea-level (Monterey, Santa Cruz, and San Mateo counties) to 2300m elevation (Alpine and Fresno counties). Numbers appear stable in both montane sections, but there have been no formal surveys of Cascade-Sierran populations in many years. Serious declines have been documented in recent years in the coastal range, particularly in Santa Cruz and San Mateo counties.

Central California coast. A thorough survey of Santa Cruz County in the 1988, including all historical coastal sites and inland at Berry Creek Falls, produced a population estimate of 17-20 pairs (Suddjian 2002). Up to another three pairs were known from Pt. Ano Nuevo in adjacent San Mateo County (Remsen 1978). Declines were noticed throughout the Santa Cruz coast during late 1990s, and an organized survey of all known and potential Santa Cruz County sites was undertaken in June-July 2002, entailing 197 hours of survey effort. Not a

single active black swift nest was located (Suddjian 2002). At Pt. Ano Nuevo, no nests were located in summer 2001 and 2002 (P. J. Metropulos, in litt., *North American Bird* (NAB) files).

In Monterey County, a small population is known from the Big Sur coast and adjacent Santa Lucia Mountains. There is confusion in the literature on the specifics of one location; those listed at Pt. Sur ("10+ pairs;" Remsen 1978) and Bixby Creek mouth (Bailey 1993) are actually the population (up to ten pairs) that nests at Rocky Point near the Palo Colorado Creek mouth (D. Roberson, pers. obs.), and it may have been birds foraging from this colony that are described from Pt. Lobos in Grinnell and Miller (1944). The 1988-1992 Monterey County breeding bird atlas project found black swifts confirmed or suspected of nesting at 3 coastal sites (Rocky Pt., Torre Creek mouth, Anderson Creek mouth) and one inland location (Canogas Falls, Devils Canyon fork of Big Creek). The county population was estimated as up to 50 pairs (Bailey 1993). A previously known nesting site at McWay Creek mouth (Roberson 1985) had no swifts. Small declines noticed during the 1990s, and the absence of swifts in some years at regular sites, resulted in a lowered current population estimate of 10-20 pairs (Roberson 2002).

Nesting is also recorded (2-4 pairs) just north of Ragged Pt. in San Luis Obispo County; summer observations at Montana de Oro State Park may suggest an additional nesting site, but may more likely be foragers (Remsen 1978, Lowther and Collins 2002, T. Edell, in litt.).

Cascades and Sierra Nevada. The highest nesting population occurs around Yosemite Valley, Mariposa County. Michael (1927) found seven nests in lower Tenaya Canyon away from waterfalls, but most of the breeding activity is centered on waterfalls (Gaines 1988). Anecdotal counts at Bridalveil Falls range from 20-50 pairs, with over 100 birds seen late in the summer (NAB files) when both parents are foraging to feed their nesting (Marin 1999). Breeding is known or suspected at Yosemite Falls, Vernal Falls, and Nevada Falls (Michael

1933, Gaines 1988, NAB files). It is possible that up to 80 pairs breed in the Mariposa County portion of Yosemite National Park. However, despite statements in Small (1994), there is no evidence of nesting in the Tuolumne County portion of the park. There is potential habitat in the Tuolumne River canyon; Grinnell and Storer (1924) reported a mid-summer bird from Dudley, Warner Valley, on or near the Mariposa-Tuolumne line, that might have been a foraging bird from a nesting pair in that canyon.

Elsewhere in the Cascades and Sierra-Nevada, small breeding colonies exist locally, in almost all cases behind or adjacent to waterfalls. The known or suspected sites, with most recent population estimates when available, follow:

In Trinity County, at Grizzly Falls in the Trinity Alps Wilderness (up to three pairs; J. E. Hunter, in litt.).

In Siskiyou County, at Mossbrae Falls near Dunsmuir on the upper Sacramento River (7-9 pairs most years; Remsen 1978, NAB files, C. Collins, pers. obs.); nesting is suspected at McCloud Falls on the McCloud River (Remsen 1978) and somewhere in the vicinity of Bridge Creek and Snowslide Gulch, Marble Mountain wilderness, 13 mi NE of Some Bar (1-2 pairs by presence of mid-summer birds; T. Leskiw, in litt).

In Shasta County, at MacArthur-Burney Falls (5-20 pairs annually; Remsen 1978, Small 1994, NAB files).

In Butte County, at Feather Falls (1-2 pairs; Remsen 1978, Knorr 1993, NAB files).

In Sierra County, near Yuba Pass (5-7 pairs; Remsen 1978).

In Nevada County, nesting is suspected behind waterfalls on East Fork Creek near Pinoli Ridge (4-8 pairs; D. Lukas, in litt.); summer records elsewhere (e.g., San Juan Ridge) may suggest additional undiscovered nesting locales.

In Placer County, nesting is likely in the Royal Gorge, north fork of American River (sites may include Heath, Rattlesnake, Snow Mountain, and Wabena falls; no nests actually found; T. Beedy, in litt.) and at Grouse Falls in a tributary of the American River (4-6 pairs possible; NAB files, E. Pandolfino in litt.).

In Alpine County, falls in Cloudburst Canyon, off the west fork of Carson River, Carson Range (4-6 pairs; Knorr 1993). This is the only known population east of the Sierran divide in California.

In Madera County, at Rainbow Falls in Devils Postpile National Monument (1-2 pairs; Gaines 1988, NAB files). This site was mistakenly attributed to "Mono County" by Small (1994), and the error repeated in Lowther and Collins (2002). There are no known populations in Mono County.

In Fresno County, considered a regular summer resident in Kings Canyon, Kings Canyon National Park, with nesting confirmed at Ella Falls in 1936 (Dixon 1943). There is very little recent information, but habitat in Kings Canyon might support 10-20 pairs or more (D. Roberson, pers. obs.). In addition, nesting is suspected at the confluence of Disappearing and Goddard creeks (at least 8 pair in mid-July 1979; H. Green, in litt.), a remote location at 2300m elevation in Kings Canyon National Park.

In Tulare County, in cliffs along the Marble Fork of the Kaweah River, Sequoia National Park (6+ pairs, three nests found; Dixon 1943); at Noble Creek Falls, 5 mi SW of Johnsondale (one pair; Lowther and Collins 2002, NAB files); and nesting suspected in cliffs along Middle Fork of Tule River, near Springville (1-3 pairs; NAB files). Summer observations at Mineral King suggest there may be additional Sequoia National Park sites to be discovered (NAB files).

In addition, black swifts are regularly seen in summer over the north fork of the Kern River, Kern County, enroute to some unknown breeding site (S. A. Laymon, in litt.), and summer observations in the White Mountains, Inyo County, suggest there may be other colonies east of the Sierran divide (S. A. Laymon in litt.).

Together, a review of known and presumed breeding locations suggests a Cascades/Sierran population of perhaps 170 pairs at up to 30 sites. Although many new nest sites were only discovered in the last half-century, black swifts have high fidelity to breeding locales (Knorr 1993, Lowther and Collins 2002) and it seems likely that these represent a historically stable montane population.

San Gabriel, San Bernardino, and San Jacinto Mountains. Foerster and Collins (1990) summarized recent surveys that showed small populations in these southern California mountains. Nesting is known at two sites in the San Gabriel Mountains, Los Angeles County (Sturdevant and Wolfskill Falls; 2-4 pairs); at Big Falls in Mill Creek Canyon near Fallsville, San Bernardino Mountains, San Bernardino County (1-2 pairs); and at three sites on the west side of the San Jacinto Mountains, Riverside County (Lawler and Four Falls, Strawberry Grotto; 9-10 pairs). Black swifts near Black Mountain Camp, Riverside County (Remsen 1978) are likely foraging birds upstream of nearby Lawler Falls. Their presence in Tahquitz Canyon, Riverside County, on the east side of the San Jacintos (Remsen 1978) may suggest an unsurveyed site, or may only represent wanderers.

The entire California population appears to be composed of perhaps 200 pairs at some 40-45 sites. At nearly half of these sites, three or fewer pairs are suspected of nesting annually. Only at 4 sites (MacArthur-Burney Falls, Bridalveil Falls, and large canyons in Kings Canyon

and Sequoia National Parks) are numbers suspected to exceed more than ten pairs, and none of these have been systematically surveyed in nearly 75 years.

Ecological Requirements

The ecological requirements for nesting black swifts are well known, and fit a very narrow profile. The swifts nest only behind or beside permanent or semi-permanent waterfalls, or on perpendicular cliffs near water (above Sierran rivers or on the sea-coast), or in sea caves (Legg 1956, Knorr 1993, Lowther and Collins 2002). Breeding black swifts are thus restricted to a very limited supply of potential nesting locations, and we suspect many, but not all, have been located.

The breeding biology of black swift resembles seabirds in many aspects: there is but a single large egg which is not replaced if lost, both the incubation and nestling periods are lengthy, and both parents feed the nestling high-fat insect prey so that by the time it fledges, the young outweighs them (Marin 1997, 1999). Foraging adults in summer may cruise far from nesting locales (Lowther and Collins 2002, Roberson 2002) and over a wide variety of habitat types, although most foraging in California seems to be over extensive coastal or montane forests. Studies of the southern California population show that both adults and the young leave the nesting vicinity upon its fledging, and presumably migrate south immediately (Marin 1999).

Threats

Most nesting sites are essentially inaccessible beyond waterfalls or on perpendicular cliffs, and many are located in protected lands (e.g., National Parks, State Parks, National Forests). Remsen (1978) cited rock-climbing as a potential threat, but the wet and mossy nature of the nesting substrate should reduce even that threat in most locations. One nest in southern California was destroyed by a thrown rock (Foerster 1987, Lowther and Collins 2002). Although not a

significant threat, land managers should continue to protect known nesting sites from disturbances such as rock-climbing or rock throwing. Coastal and cliff-face erosion probably destroys and creates suitable nesting sites; presumably this process has no long term net effect but studies are lacking.

The breeding biology of black swift (e.g., single-brooded strategy; lone egg not replaced if lost) could make them vulnerable to rapid ecological changes. Studies of the southern California population, (Foerster 1987, Marin 1999) found that over 90% of the diet fed to nestlings were winged ants. These occur patchily in localized outbreaks during the summer. If coastal and Sierran populations also rely on patchy local swarms of winged insects, collapses in the prey species may seriously affect local breeding success.

With a historic and current population of about 200 pairs, the sheer demographics of the State's population also make it vulnerable to outbreaks of disease or other pathogens; no specific threat has yet been identified. No biological or chemical agent has yet been implicated in the documented declines in the coastal population in very recent years. Identifying the cause of this decline is the most important conservation priority for black swifts in within California. It is possible that this may be traced to the currently unknown wintering grounds (Lowther and Collins 2002) or to changes in the summer prey base of swarming winged ants.

Management and Research Recommendations

- inventory all currently known nesting sites and confirm or deny nesting at the suspected nesting locales, and conduct searches for additional sites in appropriate habitat.
- conduct focused surveys to determine more precise population estimates, and use a standard protocol for making population estimates at known breeding locations as currently done in Colorado (Schultz and Levad 2001).

- initiate studies to determine the cause of the recent decline in the central coast population, and to identify continuing threats to this population, particularly in Santa Cruz and San Mateo counties, including studies on whether there have been changes in the population of swarming winged ants on the central coast.
- once the threats to the coastal population have been identified, manage the historic sites and/or the underlying prey base to reduce these threats (as much as is practical) in the future.
- continue to protect known nest sites from disturbance, and place appropriate interpretive signs in parks and trails adjacent to waterfall nesting sites to educate the public and reduce random vandalism (e.g., discourage rock-throwing behavior)
- initiate studies, possibly telemetry-based research, to determine the precise wintering locations for California-nesting black swifts.

Monitoring Needs

No current monitoring efforts (e.g., Breeding Bird Survey or other surveys) are adequate to monitor annual or long-term population changes in black swift. Annual or semi-annual inventories of breeding locations, with the aid of a standard protocol for establishing the site's population size, are needed to monitor the status of this scarce species.

Acknowledgments

We thank David L. Suddjian for first drawing our attention to the serious declines in the breeding population in Santa Cruz County, and for reviews of a draft of this manuscript. Steve Glover graciously provided copies of the *North American Birds* files in his custody. Ted Beedy, Tom Edell, Helen Green, John E. Hunter, Stephen A. Laymon, Tom Leskiw, David Lukas, Peter J. Metropulos, Joe Meyer, Ed Pandolfino, and David Suddjian all provided unpublished information about the current status of black swift breeding populations.

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